

# Olin College Registration Booklet

## Spring 2011

**Classes begin Tuesday, January 18, 2011**

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**Olin College Registration Booklet  
Spring 2011**

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**Registration Timelines  
for Add ; Drop and Pass/No Credit ; Withdraw**

<b>Session</b>	<b>Add</b>	<b>Drop and Pass/No Credit</b>	<b>Withdraw</b>
Full Semester (Jan 18 – Apr 27)	January 31, 2011	March 29, 2011	April 27, 2011
Session I (Jan 18 – Mar 4)	January 24, 2011	February 18, 2011	March 4, 2011
Session II (Mar 7 – Apr 27)	March 11, 2011	April 12, 2011	April 27, 2011

## Frequently Asked Questions and Instructions

### What do I register for?

Students are allowed to register for a maximum of 20 credits. All students have a minimum requirement of 12 degree credits to be eligible for the Olin tuition scholarship.

The maximum credits can be distributed between **degree** and **non-degree** activities.

**Degree** activities are defined as counting toward graduation credit and course requirements (all students must have a minimum of 12 degree credits). Examples of registered degree activities are standard courses, cross-registered courses, independent study and research for degree credit. Consult the catalog for your specific degree requirements.

**Non-degree** activities are defined as **not** counting toward degree and subject requirements. An example is a passionate pursuit. Non-degree activities are not graded and appear on your transcript if you have met all of your objectives for the activity. Remember these do not count in your minimum requirement of 12 degree credits.

### How do I choose my activities for degree and non-degree credit?

Use this booklet as a tool to assist you in preparation for advising discussions. Meet with your adviser BEFORE your registration date. Your adviser will “clear” you to register. If you are not cleared, you will not be permitted to register.

### I am doing a Study Away Program next semester. Do I need to register?

YES! Students in approved semester away programs must register for a single course: **AWAY1000: Study Away Program**. This course will allow Olin to certify you as a full-time student during the semester you are away. Your approved course work will be transferred to your academic record upon receipt of a transcript from the host institution (provided you have received the minimum required grade). Note: All registrations will be cross-referenced with the Study Away Committee.

### Olin Self Study, Independent Study and Research - - - How do I register?

- Olin’s Self Study – Please see information on the [StAR Center website](#) for details. You will need to complete a form with your OSS intention by the last day to add a course for the spring 2011 semester.
- Independent Study and Research - Students interested in doing research and/or independent study must complete a Cover Sheet for Independent Study and Research. This form can be found on the forms tab of the StAR Center website. All forms must be received by the add deadline for the spring 2011 semester. There are no exceptions.

### I am interested in doing a Passionate Pursuit next semester. How do I register?

If you are interested in doing a Passionate Pursuit, consult the Student Handbook for FAQ’s. Passionate Pursuits require approval from the Executive committee of the Passionate Pursuit Board in addition to consent of a faculty sponsor and the student’s adviser. Passionate Pursuit proposals should be sent to the chair of the executive board, the Dean of Student Life. The deadline is mid-semester.

## **CROSS-REGISTRATION**

### **How do I participate in Cross-Registration with Babson, Brandeis or Wellesley (BBW)?**

Olin students are allowed to take one course per school, per semester; with the exception of first semester freshmen. First semester freshmen are not permitted to participate in cross-registration.

When selecting a BBW course, keep in mind the time constraints of your Olin courses. Additionally, it is important to check for course pre-requisites and the enrollment. Under most circumstances, if the course is full, you will not be able to register for the course. Enrollment is generally found under course “tally” or listed with the course info.

All BBW courses will be noted on your Olin degree audit by ‘color’ (the area of discipline). It is the student’s responsibility to review the ARB approved ‘coloring’ on the ARB website and note the color on the cross-reg form. If a course is not found on the ‘list’, the student must petition the CSTB for appropriate coloring.

In order to submit a cross-registration request, use the cross-registration portlet under the MyStAR tab at <http://my.olin.edu>. The StAR Center will work with the host school to facilitate the registration. The following dates reflect the dates that the host school will accept cross-registration requests from Olin’s StAR Center. Olin students may submit requests to the StAR Center any time before the later of the dates listed below.

#### **Babson College Cross Registration dates:**

**November 2 – date to be determined**

You can find their offerings at <http://www.babson.edu/registrar/>.

#### **Brandeis University Cross Registration dates:**

**January 12 – 31, 2011**

All courses require instructor permission in writing (email) or via a permission code to submit with your request. You can find Brandeis offerings at <http://www.brandeis.edu/registrar/reg-sched/sch.html>.

#### **Wellesley College Cross Registration dates:**

**November 15 – date to be determined**

You can find their offerings at [Wellesley Schedule](#).

### **How do I Cross-Register to Olin College?**

Olin welcomes students from Babson, Brandeis and Wellesley to register for Olin courses. In general, all courses except for some first year courses are eligible for cross-registration with the permission of the Olin faculty member. BBW students should send a request for a course through their Registrar’s Office to the Student Accounts and Records (StAR) Center. Cross-registration request forms can be found at the home institution. Visit <http://star.olin.edu> for more information.

### **What About Co-Curriculars?**

Registration and descriptions for Co-Curriculars will be released during the add period in January. If a student has a particular interest in a co-curricular that they would like to see offered, they are encouraged to seek out a “faculty/staff” sponsor before the end of this semester and notify the Dean of Student Life. Co-Curricular offerings will be posted at <http://star.olin.edu>.

## How and When Do I Register?

Registration is done online using SIS.OLIN.EDU (we are not using the portal as it is still under maintenance for web registration) <https://sis.olin.edu>

Here are some useful tips from Olin's Information Technology Department:

During course registration sessions, the IT Help Desk often receives reports about sis.olin.edu and my.olin.edu being slow or unresponsive. In almost all cases, this is due to an excessive and often unnecessary workload placed on the system. By following these guidelines, you can help minimize this load and increase system responsiveness:

- Please use only one browser tab on one computer. In past sessions, some students were connecting from as many as four different computers or opening multiple sessions in multiple tabs. Each additional session consumes resources on the server and only serves to slow the system down.
- Please be patient and do not refresh the page. This causes the background system processing for the same task to be executed multiple times, adding additional load to the system.
- Please remember that everyone else in your group is trying to register at the same time. As much as we would like the system to be as responsive as it is during non-registration periods, this simply cannot happen when over 60 students are attempting to register for classes at the exact same moment. It takes time for the system to process all incoming requests and reconcile them with each other.
- Please avoid using the system during other groups' registration times. Again, this adds additional work to an already busy system.

With the exception of one session, we have seen the fewest slowdowns and smallest workloads on the registration system this semester that we have seen in several years thanks to many students following these guidelines.

We do realize the importance of registration to every student on campus. If you encounter errors from either sis.olin.edu or my.olin.edu during the registration process, please take a screenshot of the error you receive and send it, along with a detailed description of what you were doing when it occurred, to [helpdesk@olin.edu](mailto:helpdesk@olin.edu) so that we can resolve the issue as quickly as possible.

### REGISTRATION TIMES:

On-line registration will take place November 4 -10<sup>th</sup> during the evening hours. Information regarding the groups will be sent **via email** no later than November 2<sup>nd</sup>. NOTE: Seniors will be registering THURSDAY, November 4<sup>th</sup>. Other class groups will be forthcoming.

(Registration will be open to cleared and eligible students only. A cleared student is one that has met with his/her adviser and has an updated learning plan. An eligible student is one who does not have an outstanding financial balance with the college.)

**When is the Add Period – the Drop Period – the last day to withdraw from a course? – REFERENCE HANDY CHART at beginning of this Booklet.**

The Add period\* is the first 10 class days of the semester. The Add period will begin on January 18, 2011 and end on January 31, 2011. Add requests can be processed in person at the StAR Center and on-line. Add/Drop forms can be found at <http://star.olin.edu>.

The Drop period begins January 18, 2011 and ends March 29, 2011 (for ½ session deadlines see chart). During this time, students can alter their schedule as long as they remain in a minimum of 12 credits of degree activities. A “drop” is removed from the student schedule and does not appear on transcripts. Drops and withdrawals after the add period require a hard copy form and must be processed at the StAR Center. There are no on-line drops after the add period ends.

The last day to withdraw from a course is the last day of instruction.

(\*Additionally, students wishing to participate in cross-registration will be allowed to alter their Olin schedule to accommodate cross-registration requests if the host schools’ add/drop period extends beyond January 31, 2011. This will be done at the StAR Center once the confirmation of the cross-registered request is received. The reason for this is due to the variable times at which we can honor cross-registration requests depending on the host school’s registration times.)

**Waitlists**

Waitlists are available on most courses. In sis.olin.edu, a waitlist comment is included in the course catalog offering section by clicking on the “VIEW” button under requirements if there is indeed a waitlist.

**Textbooks**

Pursuant to the Higher Education Opportunity Act (HEOA) of 2008, information regarding required and recommended textbooks and supplemental course material may be viewed from the Olin’s internet course schedule via <https://my.olin.edu>.

**Important Information about Mathematics and Physics Offerings for the Spring**

First year students: There are NO pre-reqs for any of the integrated/coordinated mathematics offerings. This means that with respect to math/physics offerings, you can choose

- Mechanics + Differential Equations + Lin Alg (coordinated, 8 credits total)
- Electromagnetism (ModSim) + Vector Calc + Lin Alg (integrated, 8 credits total)
- Electromagnetism (Theoretical) + Vector Calc (stand alone classes, with VC as a co-req/pre-req for E&M. 6 credits total)

Note that you do not need to have taken Vector Calc in order to take the coordinated mechanics/ode/linalg offering.

If you hope to take Dynamics in the fall, you should seriously consider taking mechanics now.

Second, third, and fourth year students: We have created additional sections of mathematics offerings this spring — so it is a VERY good time to finish off those 2 credit foundation math courses that you still need to take.

## Spring 2011 Supplement to Current Course Catalog

**Degree requirements** are outlined in the 2010-11 Course Catalog. You may view the on-line catalog at [2010-11 Course Catalog](#)

**Course descriptions** can also be found in the [2010-11 Course Catalog](#). Courses for Spring 2011 that have been approved after the catalog printing AND for Special Topics descriptions please reference the listed.

### **AHSE 2199: Special Topics in Arts, Humanities, Social Sciences**

#### ***Foundations of Psychology***

Instructor: J. Adler

Credits: 4 AHSE

Hours: 4-0-8

Pre-requisite: none

Psychology is the scientific study of human behavior, thought, emotion, and motivation. Everything we do as people – from our work to our personal relationships to our sense of self – is impacted by psychological principles. This course will introduce you to some of the most significant insights that psychologists have produced about the human condition while teaching you how to think like a psychologist. You will have the opportunity to explore questions that you value in the way a psychologist would pursue them, via hands-on projects, data collection, and analysis. We will discuss such significant topics as: what it means to be normal, how identity develops, how stable mental health is and what to do to improve it, the intersection of psychology and technology, the psychology of sustainability, the reasons we hold stereotypes and prejudice, sex differences between men and women, and many others.

There are no prerequisites for this course. Having taken A.P. Psychology or psychology courses at Wellesley or Babson will give you a nice foundation for this course, but they will not be redundant with it. This will be a truly Olin course, not the type traditionally offered elsewhere.

### **AHSE 3199: Special Topics in Arts, Humanities, Social Sciences**

#### ***Issues in Leadership and Ethics***

Instructor: Miller, Schlesinger; Bottomly

Credits: 2 AHSE

Hours: 2-0-4

Pre-requisite: students in their final year of their undergraduate program

[NOTE: Class will meet on the following dates: Jan 27; Feb 3, 10, 17, 24; Mar 3, 10, 24, 31; Apr 7, 14, 21 from 6-7:45p (to 8:15p on guest speaker nights)]

This course examines the intersection of leadership and ethics in business, engineering, and more general contexts. Readings will include material on the definition and history of ethics and morality in the U.S., the definition and development of leadership skills in a professional context, the role of ethics in the professions, and case studies involving the intersection of leadership and ethics. The course will be structured as a seminar, involving guest speakers and interactive case studies. Enrollment will be limited to 8 students from each college in the final semester of their undergraduate program. The course is taught by President Bottomly, President Schlesinger of Babson College, and President Miller of Olin College.

### **AHSE 4190: Arts, Humanities Social Sciences Capstone Project**

All students must complete either an AHS Capstone project (AHSE4190), an EI Capstone project (AHSE4590), or an AHS Capstone course by the end of their senior year. To complete the AHS or EI Capstone project in the spring of 2011, register for AHSE4190 or AHSE4590 now. To declare an AHS course your AHS Capstone course, register for the specific course now, complete the form at <http://projects.oln.edu/ahs/forms/form-capstone-proposal.html>, and email the form to [ahs@olin.edu](mailto:ahs@olin.edu). For complete information on the AHS Capstone please consult the AHS website at <http://projects.oln.edu/ahs/capstone.html>.

### **ENGR 2199/AHSE 2199A: Special Topics in Engineering and AHS**

#### **Engineering for Humanity: Helping Elders Age in Place through Partnerships for Healthy Living**

Instructors: Stein/Lynch  
Credits: 2 ENGR, 2 AHS  
Hours: 5-0-7  
Prerequisites: None

*This course is suitable for students without prior engineering coursework and available for Babson and Wellesley students.*

This course introduces students to engineering problem solving, beginning with understanding client needs and ending with an implemented, adaptable, adoptable, and sustainable solutions. This course will draw equally on empathetic and ethnographic methods and on a technical understanding of the problem and solution domains. Our client population for spring 2010 will be senior citizens who live in their own homes and who will be recruited before the class begins. Over the semester, we will learn about and with our clients; we will identify specific challenges that our clients face; and – together with our clients – we will develop concrete solutions to address these challenges. Students will leave *Engineering for Humanity* with a grounded understanding of the engineering problem solving process, experience in participant-observer fieldwork, and hopefully a feeling of satisfaction at having made a concrete difference in the lives of members of our community. The course will be taught seamlessly (2cr ENGR and 2cr AHS) with integrated activities and topics ranging from anthropology/sociology to design/build.

The projects will be specific service projects that students identify and design while working with client partners (senior citizens in surrounding communities). For example, students might design a device to help someone who has difficulty reaching up to change a light bulb, something to help hold a newspaper steady with shaky hands, or something to enable someone to get clothes out of a clothing dryer that is difficult to stoop down to reach. Some sessions of the course will be devoted to co-design with the client population or to team meetings. Other sessions involving guest speakers and fieldtrips, others with course discussion of topics relevant to aging. A sense of adventure and enthusiasm is, however, highly recommended.

### **ENGR 2599: Special Topics in Computing**

#### ***Software Engineering in Java***

Instructor: A. Downey; M. Sheldon  
Credits: 4 ENGR  
Hours: 4-0-8  
Prerequisites: ENGR 2510, Software Design

This course covers the Java programming language; software design patterns; software engineering principles and tools, including revision control systems, interactive development environments, unit testing, automated testing, documentation tools and profilers. Students will work in small teams on a large distributed application; for example, a code search engine.

### **ENGR 2599A: Special Topics in Computing**

#### ***Computing and Craft***

Instructor: Milner  
Credits: 4 ENGR  
Hours: 4-0-8  
Prerequisites: none

This is a project-based course focused on using computing to sense and respond to the physical world. We will incorporate novel computational and craft elements into various sorts of interactive experiences - involving clothes, old toys, and/or fabricated mechanisms. Student projects might include: a chair that cools you off when it senses sunshine; a glove that makes sounds if separated from its mate for too long; custom equipment for a new sport or performance; a graduation gown that sends a message to graduation attendees – any kind of idea that construction kits (cutting-edge or classic) can support.

This course is about the process of engineering: creating, connecting with people who share interests, providing and receiving feedback, designing and re-designing ideas, sketching in both hardware and software, collaborating, and acquiring resources to explore one's ideas. It is a highly experimental course and will involve adaptive instructional approaches. The tools that students will use to complete the course's major projects are currently in beta stages of development and will evolve over the course of the semester. The tools that the course supports are flexible – some students will use programming tools inspired by languages ranging from novice-friendly (Scratch-like), others will be welcome to use industrial strength (C-like) tools. Students will have options to use embedded hardware platforms ranging from novice-friendly (pre-built Arduino boards) to industrial strength (custom designed boards they make from components). Students with little programming experience will have opportunities to learn key computing concepts as they use the course's tools in novel ways. Students with extensive programming and electronics backgrounds will have opportunities to extend computational construction kits to enable new functionality.

### **ENGR 3199: Special Topics in Engineering**

#### ***Robotics 2***

Instructor: D. Barrett

Credits: 4 ENGR

Hours: tbd

Prerequisites: ENGR3390 or permission of instructor

Satisfies Subject Requirements: ME, ECE, E:SYS, E:Robotics

This course builds on the core robotic concepts of sense-think-act covered in ENGR3390 Robotics, but extends them to fully integrated, complex, multi-degree of freedom robots with sophisticated industrial grade sensor systems. The course will involve a heavy lab component incorporating three canonical robot applications; an autonomous LIDAR/GPS/IMU equipped mobile outdoor robot vehicle, a 7DOF robot arm working in conjunction with a high speed vision system to perform a complex manipulation task and a pilot scale robotic assembly line with a very large number of sensors and actuators. The course will incorporate significant design, fabrication and integration tasks like the design of end effectors, and the electronic hook-up and debug of sensors and actuators, as well as include a significant amount of LabVIEW robot control code generation. This course is intended to act as solid preparation for the many complex system integration projects that typically are a significant part of the SCOPE capstone program.

### **ENGR 3199A: Special Topics in Engineering**

#### ***Instrumentation: Sensors and Signals***

Instructor: K. Lundberg

Credits: 4 ENGR

Hours: 4-4-4

Prerequisites: ENGR 2340 or ENGR 2410

Note: Can be used as an ECE or ME Elective

Science requires data, and gathering good data requires interfacing useful circuitry to useful sensors. This course is an introduction to the science and practice of instrumentation. Measurement of the real world is the basis of science, engineering, manufacturing, and design. Topics covered include surveys of sensors and transducers, the design of interface circuitry, and techniques for data acquisition. The course will contain significant open-ended laboratory projects in measurement, data collection, and reverse engineering, as well as discussions of how modern scientific instruments are enabled by novel sensors. Students will be expected to independently research topics related to instrumentation and metrology and to present case studies and project results to the class. This course would be useful for engineers in all fields and will fulfill the ME or ECE elective requirement.

### **ENGR 3199B: Special Topics in Engineering**

#### ***Automotive Technologies for a Sustainable Future***

Instructor: MacCarley

Credits: 4 ENGR

Hours: 4-0-8

Prerequisites: Upper division standing or permission of the instructor

A multi-disciplinary presentation and investigation of selected technologies associated with current and future automobiles, with emphasis on thermal efficiency, emissions including greenhouse gases, performance, and functional effectiveness. Topics will include automotive electronics, internal combustion engine operation, drivetrain control, vehicle telematics, active safety systems, alternative fuels, and electric and hybrid vehicles. Computer simulation will be used for demonstration and design as appropriate. Some individual self-study may be required. The course emphasis will be partially directed by student interests, and will range from in-depth engineering analysis of selected components to broad assessments of sustainability ramifications. Group projects will foster practical experience and focus on the design and analysis of automobiles and automotive systems to meet future needs and constraints.

**ENGR 3299: Special Topics in Design**

**ENGR 4199: Alternative Capstone in Engineering**

**Affordable Design and Entrepreneurship (ADE)**

Instructors: Linder / TBD

Credits: 4 ENGR

Hours: 2-2-8

Prerequisites: AHSE 1500, ENGR 2210 and ENGR 2250 for Olin Students; FME1000 and EPS 3501 for Babson students; Junior standing

Usually Offered: Fall, Spring

Students gain experience innovating to address social challenges through a design and entrepreneurship approach that emphasizes context, collaboration, and sustainability. The focus is on alleviating poverty by deploying innovations in communities that generate income and meet daily human needs in areas like energy, water, health, agriculture, transportation, and communication. For example, students might create and test the technology for a micro energy utility, such as a concentrated-solar battery charging station, and the business model that makes it viable.

The course is run as a firm where students work in teams with community partners nationally and internationally to co-create and launch new products and ventures. Topics covered include the conditions and causes of poverty, approaches to poverty alleviation, cultural awareness and community engagement, affordable design principles and practices, and social venture models and strategies including financing and scaling. Groups of students travel to partner sites in countries like India, Morocco, Ghana, El Salvador and the U.S. to build relationships, gain contextual awareness, and implement projects.

This course is offered jointly with Babson, and Babson students are strongly encouraged to enroll. At Olin, ADE is an experimental, two-course engineering capstone program. Olin students can elect ADE as an alternative to the SCOPE program beginning in their junior or senior year by registering for ENGR 4199. They cannot change programs once enrolled. Alternatively, this course can be taken for one semester to fulfill the Olin Design Depth requirement by registering for ENGR 3299. Enrollment is limited. All students are initially wait-listed, students then apply to the program, and successful applicants are admitted off of the wait-list.

**ENGR 3299A: Special Topics in Design Engineering**

***Real Products, Real Markets***

Instructor: L. Neeley

Credits: 4 ENGR

Hours: 4-0-8

I am offering a new experimental course intended to completely reimagine the product design + entrepreneurship process. Each participant in the course will imagine, design, prototype, test, market and sell a product in the span of the semester. The products and customers will be real. A key measure of success will be the number of products successfully sold and shipped to complete strangers. To achieve these lofty goals, we will have to explore, understand and analyze each element of existing processes with an eye towards exploiting best practices, redesigning them when relevant and, if needed, creating processes anew.

In true Olin spirit we used the prior semester (Fall 2010) to engage a small group of students to aid in the creation of this new course. In this class we will leverage their amazing work in applying a design thinking approach to the act of product design itself that has helped to initiate a design process more suited users like ourselves: individuals or small teams, limited resources and timescales on the order of weeks and months rather than years.

**ENGR 3399: Special Topics in Mechanical Engineering**

***Mechanical and Aerospace Systems II***

Instructor: C. Lee

Hours: 4-0-8

Prerequisites: ENGR 2210 or permission of instructor

Note that Mechanical and Aerospace Systems I is not a pre-requisite for this course.

A student team will work in the manner of a small engineering research and development company to develop a mechanical or aerospace system to address a current market need. A comprehensive system design will be developed based upon quantitative analysis using commercial simulation software. Prototypes systems will be fabricated, evaluated and refined to meet performance objectives.

This semester will focus on the design and fabrication of a 'perching' landing gear system for a small autonomous or remotely controlled air vehicle. The landing gear will enable the air vehicle to grab a hold of and land upon tree branches. Mechanical aspects dominate but there is a need for hardware and software development of sensors and instrumentation.

### **ENGR 3499: Special Topics in Electrical and Computer Engineering**

#### ***Principles of Wireless Communications***

Instructor: S. Govindasamy

Credits: 4 ENGR

Hours: 4-0-8

Prerequisites: ENGR 3420, familiarity with basic Linear Algebra and Probability

This course teaches students the main principles of modern wireless communications systems. Students will learn about the propagation and modeling of wireless signals, communications concepts particularly applicable to wireless channels such as channel coherence, diversity, and outage capacity, multiple-input-multiple-output (MIMO) channels using multiple antennas, and multi-user communications. Students will be required to do a substantial, simulation or in exceptional cases hardware-based design project.

### **ENGR 3499A: Special Topics in Electrical and Computer Engineering**

#### ***Mobile Application Development***

Instructor: M. Chang

Credits: 4 ENGR

Hours 4-0-8

Prerequisites: (suggested, otherwise with faculty approval) ENGR 2250: User-Oriented Collaborative Design, ENGR 2510: Software Design, AHSE 1500: Foundations of Business and Entrepreneurship

The objective of the course is to investigate the mobile marketplace through the lenses of design, entrepreneurship, and engineering. Students will use their skills in ideation, user study, and lightweight rapid prototyping to design an interesting mobile product. Students will unpack the mobile market space to find points of opportunity. Finally, students will explore common software engineering techniques and resources while learning to develop applications for a popular mobile device such as Google Android and Microsoft Windows Phone 7 smartphones.

For Spring 2011, Mobile Application Development will be taught simultaneously with ENGR 3499B: Web Application Development. Students from both classes will work together in cross-platform teams on all assignments, labs, and projects to develop a deeper understanding of designing and implementing a marketable digital service that leverages both mobile and web technologies. The final project for the course will be to launch a viable service into the wild.

### **ENGR 3499B: Special Topics in Electrical and Computer Engineering**

#### ***Web Application Development***

Instructor: M. Chang

Credits: 4 ENGR

Hours 4-0-8

Prerequisites: (suggested, otherwise with faculty approval) ENGR 2250: User-Oriented Collaborative Design , ENGR 2510: Software Design, AHSE 1500: Foundations of Business and Entrepreneurship

The objective of the course is to investigate the modern digital internet services industry through the lenses of design, entrepreneurship, and engineering. Students will learn design patterns for web application design, study the recent market history of web-based services, and learn to develop their own web applications using scalable frameworks such as Ruby on Rails and Google Appengine.

For Spring 2011, Web Application Development will be taught simultaneously with ENGR 3499A: Mobile Application Development. Students from both classes will work together in cross-platform teams on all assignments, labs, and projects to develop a deeper understanding of designing and implementing a marketable digital service that leverages both mobile and web technologies. The final project for the course will be to launch a viable service into the wild.

### **ENGR 3699 Special Topics in Bioengineering**

#### ***Transport in Biological Systems***

Instructor(s): Sarang-Sieminski with Guest Appearances from J. Geddes

Credits 4 ENGR

Hours 4-0-8

Prerequisites: MTH 2140 Differential Equations, SCI 1210 Principles of Modern Biology

Transport phenomena play a vital role in numerous biological processes. For example, the blood flow patterns arising from the particular geometry of branching blood vessels are thought to drive the formation of atherosclerotic plaques. Mass transport plays a role in events such as tissue differentiation during development, oxygenation of blood in the lungs, and glomerular filtration in the kidneys. The entire field of drug delivery has been driven and advanced by understanding transport of pharmacological agents within biomaterials and tissues. Further, combination of fluid and mass transport allow us to understand flow through porous media which is critical for understanding problems such as delivery of chemotherapeutics and tumor metastasis. The roles of transport in understanding and treating cancer will be a theme throughout this course. We will study and analyze mathematical models of these key biological problems using both analytical and computational tools. Through a series of readings and projects, this course will combine engineering fundamentals of mass, energy, and momentum conservation with modeling approaches to enhance exploration and understanding of fluid and mass transport within the body. This course will be of value to students interested in biology, mathematical modeling, and bioengineering.

### **ENGR 3899: Special Topics in Materials Science**

#### ***Thin Films Materials Science***

Instructor: M. Neal

Credits: 4 ENGR

Hours: Hours 4-0-8

Prerequisites: SCI 1410

Fabrication of materials in thin film form has been an enabling technology for the microelectronics industry as well as large-area electronics, MEMS, and some areas of biotechnology and bioengineering. We will take the usual materials scientist's approach of exploring the relationships between structure, properties, processing and applications as applied to this unique and important form of materials. Topics covered will include process technologies, mechanical and electrical properties, nucleation and growth mechanisms, and process control. Coursework will include projects, readings, discussions, labs, and problem sets. Process technologies available at Olin include thermal evaporation and chemical solution deposition. Students will experience fabricating films using both of these methods.

### **MTH 3198: Olin Self Study in Mathematics**

#### ***Investigating the Theory and Application of Matrices***

Instructor: S. Adams

Credits: 4 MTH; Experimental Grading will be used

Hours: 4-0-8

Prerequisites: MTH 2120, Linear Algebra

Students will engage in activities, including reading and discussing research literature, to learn about the theory and application of matrices. Students will play an active role in developing personal learning objectives and a learning plan to achieve these objectives. Most of the students' efforts will be organized around projects they design in order to investigate in depth certain topics that are relevant to their interests and major areas of study. In addition, occasional lectures, including guest lectures, will introduce topics to the entire class; topics might include Hadamard matrices over a binary alphabet as applied to communications systems, image processing, dynamic stability, or discrete Fourier transforms. **This class satisfies the OSS requirement (if desired), the ME Advanced Mathematics requirement, and the E: BioE Advanced Mathematics requirement, assuming students complete projects that are relevant to their area of study.**

### **SCI 2299: Special Topics in Biology**

#### ***Microbial Diversity***

Instructor: J. Huang

Credits: 4 SCI

Hours: 4-2-6

Prerequisites: SC1210 Modern Biology

This course is an introduction to the tremendous diversity of the microbial world. The focus will be on the study of environmental bacteria and their metabolic, physiological and genetic diversity. Topics will include: bacterial growth, nutrient cycling, symbiosis, bioremediation, and molecular methods to work with bacteria. A significant portion of the course will involve exploration of the microbial world in the laboratory through individual and group projects. Students will gain experience with techniques to culture and study a variety of environmental bacteria and learn to use tools in bioinformatics. Students of this course will develop a working knowledge of microbiology, and one goal is to apply the potential of the microbial world towards development of sustainable biological solutions.

Area	Course #	Sec #	Course Title	Instructor	Credits	Time	Location	Enroll Limits	Notes
AHS	AHSE 0112	01	The Olin Conductorless Orchestra	Dabby	1	R 6:45-9:00pm	AC305 AC318	30	
AHS	AHSE 1110	01	History of Technology: A Cultural and Contextual Approach	Martello	4	TF 1:30-3:10p	AC326	20	Open to FIRST YEAR students ONLY
AHS	AHSE 2199	01	Special Topics in Arts, Humanities, Social Sciences: <i>Foundations of Psychology</i>	Adler	4	TF 9-10:40a	AC328	20	
AHS	AHSE 3190	01	Arts, Humanities, Social Sciences Capstone Preparatory Workshop	Epstein	1	n/a		20	
AHS	AHSE 3199	01	Special Topics in Arts, Humanities, Social Sciences: <i>Leadership and Ethics</i>	Miller/Bottomly/ Schlesinger	2	R 6-7:45p (8:15p if guest speaker)	at Babson	8	Seniors Only; Meets on the following dates: Jan 27, Feb 3, 10, 17, 24, Mar 3, 10, 24, 31, Apr 7, 14, 21
AHS	AHSE 4190	01	Arts, Humanities, Social Sciences Capstone	Lynch	4	R 3:20-6:00p	AC326	20	
DSN	ENGR 2250	01	User Oriented Collaborative Design	Linder/Neeley/Ben- Ur/Donis- Keller/Bator/Chang	4	MR 3:20-6:00p	MH120 AC204	30	
DSN	ENGR 2250	02	User Oriented Collaborative Design	Linder/Neeley/Ben- Ur/Donis- Keller/Bator/Chang	4	MR 3:20-6:00p	MH120 AC206	30	
DSN	ENGR 2250	03	User Oriented Collaborative Design	Linder/Neeley/Ben- Ur/Donis- Keller/Bator/Chang	4	MR 3:20-6:00p	MH120 AC209	30	
DSN	ENGR 3260	01	Design for Manufacturing	Bennett	4	MR 9-10:40a	AC109	25	
DSN	ENGR 3299	01	Special Topics in Design: Affordable Design and Entrepreneurship (ADE)	Linder	4	TF 1:30-3:10p	AC213	tbd	Design Depth: Selection via application process with Prof Linder
DSN	ENGR 3299A	01	Special Topics in Design: <i>Real Products, Real Markets</i>	Neeley	4	TF 10:50-12:30p	AC213	25	
E!	AHSE 1500	01	Foundations of Business and Entrepreneurship	Gold	4	TF 9-10:40a	AC326	30	
E!	AHSE 1500	02	Foundations of Business and Entrepreneurship	Gold	4	TF 10:50-12:30p	AC326	30	
E!	AHSE 4590	01	Entrepreneurship Capstone	Schiffman	4	T 9-10:40a	AC309	15	
E:BE	ENGR3699	01	Special Topics in Bioengineering: Transport in Biological Systems	Sarang- Sieminski	4	TF 10:50-12:30p	AC313	25	
E:C	ENGR 2510	01	Software Design	Downey; Morrow	4	TF 10:50-12:30p	AC318	25	
E:C	ENGR 2510	02	Software Design	Downey; Morrow	4	TF 1:30-3:10p	AC318	25	

Area	Course #	Sec #	Course Title	Instructor	Credits	Time	Location	Enroll Limits	Notes
E:C	ENGR 2599	01	Special Topics in Computing: Software Engineering in Java	Downey; Sheldon	4	TF 9-10:40a	AC318	25	
E:C	ENGR2599A	01	Special Topics in Computing: Computing and Craft	Millner	4	MR 10:50-12:30p	AC318	20	
E:C	ENGR 3525	01	Software Systems	Sheldon	4	TF 1:30-3:10p	AC128	25	
E:MS	ENGR 3810	01	Structural Biomaterials	Chachra	4	MR 1:30-3:10p	AC417 AC413	25	
E:MS	ENGR 3899	01	Special Topics in Materials Science: <i>Thin Film Materials Science</i>	Neal	4	TF 1:30-3:10p	AC413	25	
ECE	ENGR 2410	01	Signals and Systems	Mahajan	4	TF 10:50-12:30p	AC328	48	
ECE	ENGR 2420	01	Introduction to Microelectronic Circuits	Minch	4	MR 1:30-3:10	AC304	32	Must Enroll in Either Lab A or B
ECE	ENGR 2420 L	A	LAB: Intro Microelectronic Circuits	Minch	0	T 7-8:40p	AC304	20	
ECE	ENGR 2420 L	B	LAB: Intro Microelectronic Circuits	Minch	0	W 12:30-2:10p	AC304	20	
ECE	ENGR 3415	01	Digital Signal Processing	Dabby	4	TF 1:30-3:10p	AC304	25	CANCELLED
ECE	ENGR 3499	01	Special Topics in Electrical and Computer Engineering: Principles of Wireless Communications	Govindasamy	4	MR 10:50-12:30p	AC304	25	CANCELLED
ECE	ENGR 3499A	01	Special Topics in Electrical and Computer Engineering: Mobile Application Development	Chang	4	MR 1:30-3:10p	AC126	15	This course cross-listed with Web Application Development. Enroll for one or other; not both.
ECE	ENGR 3499A	02	Special Topics in Electrical and Computer Engineering: Web Application Development	Chang	4			15	This course cross-listed with Mobile Application Development. Enroll for one or other; not both.
ENGR	ENGR 1121	01	Real World Measurements	Storey, MacCarley	3	W 9-10:40a; T 9-10:40a	MH120(W); AC428	23	
ENGR	ENGR 1121	02	Real World Measurements	Storey, MacCarley	3	W 9-10:40a; T 10:50a-12:30p	MH120(W); AC428	23	
ENGR	ENGR 1121	03	Real World Measurements	Minch, MacCarley	3	W 9-10:40a; F 9-10:40a	MH120(W); AC428	23	
ENGR	ENGR 1121	04	Real World Measurements	Storey, Minch	3	W 9-10:40a; F 10:50a-12:30p	MH120(W); AC428	23	
ENGR	ENGR 1330	01	Fundamentals of Machine Shop Operations	Anderson	4	W 12:30-4:30p	AC104	6	

Area	Course #	Sec #	Course Title	Instructor	Credits	Time	Location	Enroll Limits	Notes
ENGR	ENGR 2210	01	Principles of Engineering	Govindasamy, Hoover, Minch	4	MR 9-10:40a	AC306 AC309	50	
ENGR	ENGR 3199	01	Special Topics in Engineering: <i>Robotics 2</i>	Barrett	4	MR 1:30-3:10p	AC309	25	
ENGR	ENGR 3199A	01	Special Topics in Engineering: <i>Instrumentation: Sensors and Signals</i>	Lundberg	4	MR 9-10:40a	AC304	25	
ENGR	ENGR 3199B	01	Special Topics in Engineering: Automotive Technologies for Sustainable Future	MacCarley	4	TF 9-10:40a	AC304	25	
ENGR	ENGR 4190	sec 01-15	Senior Capstone Program in Engineering (SCOPE)	Bennett et al	4	Wed 9-10:40a; 12:30-6:00pm	n/a	90	Enroll in the same section you are in for Fall 2010
ENGR	ENGR 4199	01	Alternative Capstone in Engineering: Affordable Design and Entrepreneurship	Linder	4	TF 1:30-3:10p	AC213	tbd	Alternative Capstone Stream: Selection via application process with Prof Linder
ENGR	ENGR 4199A	01	Alternative Capstone in Engineering: Affordable Design and Entrepreneurship	Linder	4			tbd	for Non Olin Students Only
ENGR/AHS	ENGR 2199 / AHSE 2199A	01	Special Topics: <i>Engineering for Humanity</i>	Lynch & Stein	4	T 3:20-6:00p & W 12:30-1:50p	AC109	15	Waitlist available
Independent Study	ENGR, SCI, MTH 0098, AHSE 0198; AHSE 0598; ISR 0098		Independent Study Activity		varied				Enroll via Paper Application Process. Deadline is the last day to ADD.
ME	ENGR 2320	01	Mechanics of Solids and Structures	Lee	4	TF 1:30-3:10; W 9-10:40a	AC328	45	
ME	ENGR 2330	01	Introduction to Mechanical Prototyping	Barrett	4	MR 10:50-12:30p	AC309	25	
ME	ENGR 2350	01	Thermodynamics	Storey	4	MR 1:30-3:10p	AC328	25	
ME	ENGR 3370	01	Controls	Hoover	4	MR 3:20-5:00p	AC318	25	
ME	ENGR 3399	01	Special Topics in Mechanical Engineering: <i>Mechanical and Aerospace Systems II</i>	Lee	4	TF 10:50-12:30p	AC309	8	Waitlist available
MTH	MTH 1120	01	Vector Calc	Osborne	2	MR 1:30-3:10p	AC113	30	Session I
MTH	MTH 1120	02	Vector Calc	Osborne	2	MR 10:50-12:30p	AC113	30	Session II
MTH	MTH 2120	01	Linear Algebra	Rubiano	2	TF 10:50-12:30p	AC128	30	Session I
MTH	MTH 2120	02	Linear Algebra	Rubiano	2	TF 9-10:40a	AC128	30	Session II

Area	Course #	Sec #	Course Title	Instructor	Credits	Time	Location	Enroll Limits	Notes
MTH	MTH 2130	01	Probability and Statistics	Rubiano	2	TF 9-10:40a	AC128	30	Session I
MTH	MTH 2130	02	Probability and Statistics	Rubiano	2	TF 10:50-12:30p	AC128	30	Session II
MTH	MTH 2140	01	Differential Equations	Osborne	2	MR 10:50-12:30p	AC113	30	Session I
MTH	MTH 2140	02	Differential Equations	Osborne	2	MR 1:30-3:10p	AC113	30	Session II
MTH	MTH 3120	01	Partial Differential Equations	Hoffman	4	MR 10:50-12:30p	AC328	40	
MTH / ENGR	MTH 3140 / ENGR 3140	01	Error Control Codes	Adams	2 + 2	MR 9:00-10:40a	AC318	25	This course is both MTH and ENGR. Must enroll in both ENGR3140, sect 01 and MTH3140, sect 01
MTH / OSS	MTH 3198	01	Olin Self Study in Mathematics: <i>Investigating the Theory and Application of Matrices</i>	Adams	4	MR 1:30-3:10p	AC318	25	Prereq=Linear algebra; Also Meets OSS requirement (if desired); <b>Experimental Grading</b>
Research	ENGR, SCI, MTH 0097, AHSE 0197; AHSE 0597; ISR 0097		Undergraduate Research Activity		varied				Enroll via Paper Application Process. Deadline is the last day to ADD.
SCI	SCI 1121	01	Electricity and Magnetism: <i>A Theoretical Approach</i>	Zastavker	4	MR 9-10:40a	AC126	30	This is a 4 unit course that requires students to either have previously passed vector calc, or to enroll concurrently in vector calculus in session I
SCI	SCI 1210	01	Principles of Modern Biology with Lab	Pratt, J	4	TF 1:30-3:10p; T 3:20-6:00p	AC417 AC404 AC406	30	
SCI	SCI 1210	02	Principles of Modern Biology with Lab	Huang	4	MR 10:50-12:30p	AC417	30	Enroll in the 02 Lecture section and either LAB course SCI1210 L section A OR B
SCI	SCI 1210 L	A	LAB: Principles of Modern Biology	Huang	0	W 12:30-3:10p	AC406	15	Enroll in the 02 Lecture section and either LAB course SCI1210 L section A OR B
SCI	SCI 1210 L	B	LAB: Principles of Modern Biology	Huang	0	W 3:20-6:00p	AC406	15	Enroll in the 02 Lecture section and either LAB course SCI1210 L section A OR B
SCI	SCI 1310	01	Intro Chemistry with Lab	Morse	4	TF 9-10:40a	AC417	30	Enroll in the 01 Lecture section and either LAB course SCI1310 L section A or B
SCI	SCI 1310 L	A	LAB: Intro Chemistry	Morse	0	T 3:20-6:00p	AC409	15	Enroll in the 01 Lecture section and either LAB course SCI1310 L section A or B
SCI	SCI 1310 L	B	LAB: Intro Chemistry	Morse	0	W 3:20-6:00p	AC409	15	Enroll in the 01 Lecture section and either LAB course SCI1310 L section A or B
SCI	SCI 1410	B1	Materials Science and Solid State Chemistry with Lab: <i>Thermal and Mechanical Properties</i>	Stolk	4	M 3:20-6:00p; W 12:30-3:10p	AC413	21	
SCI	SCI 1410	C1	Materials Science and Solid State Chemistry with Lab: <i>Biomaterials, Polymers and Mechanical Properties</i>	Chachra	4	MR 9-11:40a	AC413	21	<b>CANCELLED</b>

Area	Course #	Sec #	Course Title	Instructor	Credits	Time	Location	Enroll Limits	Notes
SCI	SCI 2210 / BISC336	01	Immunology (at Wellesley)	Pratt, J	4	M 1:30-4:00pm at Wellesley		n/a	If interested, contact Professor Pratt for course details. Enrollment via cross-registration for BISC336.
SCI	SCI 2299	01	Special Topics in Biology: <i>Microbial Diversity</i>	Huang	4	MR 9-10:40a	AC417 AC404	18	
Self Study	ENGR, SCI, MTH, AHSE 4198; AHSE 4598 ; ISR 4198		Olin Self Study		2 or 4				Enroll via Paper Application Process. Deadline is the last day to ADD.
Special Integrated Offering A		This is a coordinated, 8 unit experience. Students must enroll in all 8 units (Martello AHS and Stolk MatSci section A)							
	AHSE 2110	A	The Stuff of History: Materials and Culture in Ancient, Revolutionary and Contemporary Times	Martello	4	TF 10:50-12:30p	AC417 AC413	21	Enroll in this and SCI1410A sec A
	SCI 1410A	A	Materials Science and Solid State Chemistry with Lab: Historical Context	Stolk	4	TW 3:20-6:00p	AC417 AC413	21	Enroll in this and AHSE2110 sec A
Special Integrated Offering B		Mechanics/Linear/Diff Eq: This is a coordinated, 8 unit experience. Students must enroll in all 8 units (Hoffman DEs/LinAlg, Christianson Mechanics) unless they have previously passed both linear algebra and differential equations.							
	MTH 2120	B	Linear Algebra	Hoffman	2	MR 3:20-5:00p	AC128	36	Enroll in both MTH2120 and MTH2140 secs B AND enroll in SCI1130 sec B1 OR B2
	MTH 2140	B	Differential Equations	Hoffman	2			36	Enroll in both MTH2120 and MTH2140 secs B AND enroll in SCI1130 sec B1 OR B2
	SCI 1130	B1	Mechanics: Experimental Approach	Christianson	4	MR 9-10:40a	AC128	18	Enroll in MTH2120 sec B AND MTH2140 sec B
	SCI 1130	B2	Mechanics: Experimental Approach	Christianson	4	MR 1:30-3:10p	AC128	18	Enroll in MTH2120 sec B AND MTH2140 sec B
Special Integrated Offering C		ModSim E&M/Vector Calc/Linear Algebra: This is an integrated, 8 unit experience (like Stuff of History). Students must enroll in all 8 units (Geddes LinAlg, Geddes VC, Somerville E&M)							
	MTH 1120	C	Vector Calculus: Modeling and Simulation Approach	Geddes	2	MR 10:50-12:30p	AC326	30	
	MTH 2120	C	Linear Algebra: Modeling and Simulation Approach	Geddes	2			30	
	SCI 1121	C	Electricity and Magnetism: Modeling and Simulation Approach	Somerville	4	MR 1:30-3:10p	AC326	30	
Other	AWAY1000	01	Study Away Program		12		n/a	n/a	Registration Required for those in APPROVED Study Away Programs
Other	OIP 1000	01	The Olin Internship Practicum	Phelps	1	select seminars	n/a	n/a	SEE PGP for Enrollment information



AHSE				SCI				Math				Integrated Offering				Color Key- Offering Blocks															
Thursday										Friday																					
SCI 2299 Microbial Diversity	SCI 1121 sec 01 Electricity and Magnetism: Theoretical Appr	ENGR 2210 Principles of Engineering	ENGR 3260 Design for Manufacturing	ENGR 3199A Spec Top in Engineering: Instrumentation: Sensors Signals	SCI 1130 sec B1 Mechanics WITH MTH2120/ MTH2140 Secs B	MTH 3140 / ENGR 3140 Error Control Codes			SCI 1410 Sec C1 Materials Science and Solid State Chemistry: Characterization	AHSE 1500 Sec 01 Found Bus & EI	ENGR 1121 sec 03 Real World Measurements	AHSE 2199 Spec Top AHS: Fnd of Psychology	SCI 1310 Intro to Chemistry	ENGR 2599 Spec Top in Computing: Software Engr in Java	ENGR 3199B Spec Top in Engineering: Auto Tech Sustain Future AC304	MTH 2130-01 Probability and Statistics	MTH 2120-02 Linear Algebra			9:00 AM											
AC417 AC404	AC428	AC306 AC309	AC109	AC304	AC128	AC318		9-11:15a	AC326	AC428	AC328	AC417	AC318	AC304	AC128	AC128				10:40 AM											
SCI 1210 sec 02 Prin of Modern Biology	ENGR 2320 Mechanical Prototyping	ENGR 2599A Spec Top in Computing: Computing & Craft	ENGR 3499 Spec Top ECE: Prin of Wireless Communication	MTH 3150 Partial Differential Equations	MTH 1120 & 2120 secs C Vec Calc Lin Alg WITH E&M Mod Sim	MTH 2140 Sec 01 Differential Equations	MTH 1120 Sec 02 Vector Calculus		AC413	AHSE 1500 Sec 02 Found Bus & EI	ENGR 1121 sec 04 Real World Measurements	AHSE 2120 SCI 1410A Stuff of History	ENGR 3399 Spec Top ME: Mech Aerospace II	ENGR 2410 Signals and Systems	ENGR 2510 sec 01 Software Design	ENGR 3299A Spec Top in Design: Real Products, Real Markets	ENGR 3699 Spec Top in Bioengineering: Transport Bio Systems	MTH 2130-02 Probability and Statistics	MTH 2120-01 Linear Algebra		10:50 AM										
Huang Lecture AC417	AC309	AC318	AC304	AC328	AC326	AC113	AC113		AC413	AC326	AC428	AC413 AC417	AC309	AC328	AC318	AC213	AC313	AC128	AC128		12:30 PM										
ENGR 3810 Structural Biomaterials	ENGR 2420 Intro MicroElectronic Circuits	ENGR 2350 Thermodynamics	ENGR 3199 Spec Topics in Engr: Robotics 2	SCI 1130 sec B2 Mechanics WITH MTH2120/ MTH2140 Secs B	SCI 1121 sec C Elect & Magn: Mod Sim w/ MTH 1120 & 2120	MTH 3198 Spec Top in Math: Investigating Theory Appl Matrices	MTH 2140 Sec 02 Differential Equations	MTH 1120 Sec 01 Vector Calculus	ENGR 3499A secs 01&02 Spec Top ECE: Mobile and Web Dev't AC126	ENGR 2320 Mechanics Solids Structures	ENGR 3299 and 4199 Affordable Design & EI	ENGR 3899 Spec Top: Thin Films	SCI 1210 sec 01 Prin of Modern Biology	AHSE 1110 Hist of Technology OPEN TO select 1stYrs	ENGR 2510, sec 02 Software Design	ENGR 3415 Digital Signal Processing	ENGR 3525 Software Systems			1:30 PM											
AC417 AC413	AC304	AC328	AC309	AC128	AC326	AC318	AC113	AC113	AC126	AC328	AC213	AC413	AC417	AC326	AC318	AC304	AC128				3:10 PM										
ENGR 2250 Sec 01, 02, 03 User-Oriented Collaborative Design		ENGR 3370 Controls	AHSE 4190 AHS Capstone	MTH 2120 & 2140 Sec B LinAlg DEs w/ Mechanics SCI 1130-B1 or B2						Community Service										3:20 PM											
AC 204, 206, 209; MH120		AC318	AC326	AC128																											5:00 PM
AHSE 3199 Issues in Leadership and Ethics 6-7:45p (some nights 6-8:15p) at BABSON																						9:00:00-6:00:00:6									
			AHSE 0112 Olin Conductorless Orchestra 6:45-9pm 305 + 318																												